ISO2685 Revision
Fire Testing For Propulsion

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Background

CEAT study (1) assessed fire effect onto various components when using different methods / standards used for fire resistance/fireproofness testing (Designated Fire Zone)

- Aircraft Material Fire Test Handbook (Chapter 12)
- AC 20-135
- ISO 2685

(1) International Aircraft Material Fire Test Working Group – Atlantic City – Oct08
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**Background**

**Comparative test: oil burner vs gas burner**

**3 different samples:**
- Aluminium sheet
- Aluminium tube
- Aluminium former

Critical area: 1.2mm Aluminium sheet behind a 3mm steel plate
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**Background**

Comparison of Failure Times

- **Gas Burner** vs **Oil Burner**
  - **Plate (melting)**: 268 (Oil) vs 308 (Gas), +15%
  - **Plate (burnthrough)**: 321 (Oil) vs 285 (Gas), +46%
  - **Tube**: 70 (Oil) vs 102 (Gas), >+87%
  - **Former**: >900s, >+200%

Gas burner less severe
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Background

Steel Plate

- Estimated area >520°C:
  - Oil Burner: 180 cm² (~14cm x 14cm)
  - Gas Burner: 49 cm² (~7cm x 7cm)
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**Issue**

- Gas burner flame less severe than Oil Burner
- Oil burner representative of powerplant fire threat environment (not gas)
- « informative » vs « formative »
  - Vibration is representative of powerplant environment and is requested for designated fire zone.
- « Critical parts », « major cross-section » definitions shall be added.
- Maximal dimensions of the specimen to be tested shall be addressed
- Heat flux density measurement method to be precised
- ...

European Aviation Safety Agency
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Status

- BNAé – EASA - DGAC – CEAT – Airbus Meeting on November 2008 to present CEAT preliminary results
- BNAé agreed to present subject at TC20 ISO committee (October 2009)
- Green Light for Working Group setting (November 2009)
- Working Group kick-off: 26 May 2010
Thank you